Additional Anſwers of Dr. Tonge *to ſome of the Queries about* Vegetables, *printed in* Numb. 43.

T*O the* 11*th*. I add, that the Sap (*e.g.*) of a large Walnut in the latter ſeaſon of its running, *i. e.* when it yields no ſap any longer in the Body or Branches at any time of the day, runs longer at the roots on the *South* or Sunny-ſide, than on the *North* or ſhady ſide.

To the 12*th*. *Birch-trees* bored in the Spring ſo late, in reſpect both of the year and day, that they have afforded no Sap at all at the body, have been found ſometime after, to have iſſued ſuch plenty of juice, as hath condenſed in the hole to a ſtiff Jelly. This I ſuppoſe to have riſen not about Autumn, (as ſome conjecture) but in the heat of ſome day the ſame Spring, or in ſome extraordinary hot day following after that tryal, or the hole to have been made too late in the evening after the tree hath ceaſed to run for that day: Or elſe it hath in ſome favorable ſeaſon run earlier than ordinary in the Spring following. But this is left to farther tryal; as alſo, Whether the ſap in trees, *e.g.* in *Maples*, will not run ſome dayes ſooner at the roots, than at body and branches; as they alſo run at roots ſome dayes longer than at body and branches.

To the 13*th*. As plenty of Rain can cauſe no more plenty of Sap than the pores of the root, body and branches will admit; which muſt ſtay ſome time to be digeſted, and converted into nouriſhment: So too much cold rain may by over-cooling hinder the Sap, by abating from the degree of heat neceſſary to pulſion of Sap into the root, and to the digeſtion in the tree; which is alſo in watering. On this ground it ſeems probable, that drawing Sap conſtantly from trees every year, will not hinder their growth in body, branches, leaves, nor fruit, to any great prejudice; for, pulſion will ſtill ſupply juice into the emptied pores, till their capacity be filled.

It is poſſible alſo, that trees may grow better, and give more fruit, if the right art of drawing ſap be found out for that end; as ſome perſons grow fatter by often Bleeding. If plenty of Sap drawn from trees hinder at all, it ſeems probable, that it will hinder growth of fruit, leaves, or uppermoſt ſhoots in tops of trees, and yearly ſhoots in extreme parts. If by Obſervation this be verified, then hence we have a probable reaſon of Suckers robbing fruit, *viz*, becauſe till the whole tree be filled of Sap, the fruit cannot be ſerv'd in the uttermoſt branches: wherefore not only Suckers, but all ſuperfluous not-bearing Branches are to be carefully cut away before, or at the entrance of the Spring. Hence alſo it is to be inquired, Whether there be not ſome peculiar ſeaſons to cauſe Timber, Branches and Fruit to increaſe; and whether the *firſt* ſeaſon of the ſtirring of Sap be moſt proper to increaſe Roots, or the *laſt*; and in the middlemoſt ſeaſon, when it reaches the top-moſt branches, propereſt for Fruit? Alſo, whether what they call *Blaſting*, be not ſometimes for want of ſupply of Sap at thoſe ſeaſons ſubject to blaſting? And whether, by diſcreet watering and manuring, Trees that bear only ſome years, may be cauſed to bear yearly, which ſome Fruit-trees are obſerv'd to do in all ſoils, and others in ſome ſoils, and not otherſome.

Quære alſo, if the ſoyle cauſe this diverſity of fruitfulneſs by diverſity of pulſion, and plenty of ſap therein depending, what ſort of ſoyl *that* is, and how it may be imitated by Art?

Quære farther, Whether pruning the roots, by diverſifying the Pulſion, may not alſo promote the fruitfulneſs, by taking of thoſe that lead immediately to wood, *i.e.* the *ſhorteſt*, and of the latter years ſhooting, and as it were the Suckers of the root, and leaving and nouriſhing thoſe which feed fruit eſpecially, which are ſuppoſ'd to be the *longeſt*, and of the former years ſhooting? And, whether cleaving roots ſo, as to cauſe new ones to ſpring from the inner part of the cleft, held open by a ſtone, do not help fruitfulneſs for this cauſe?